Online Ticketing and Theatre Management System

GROUP MEMBER

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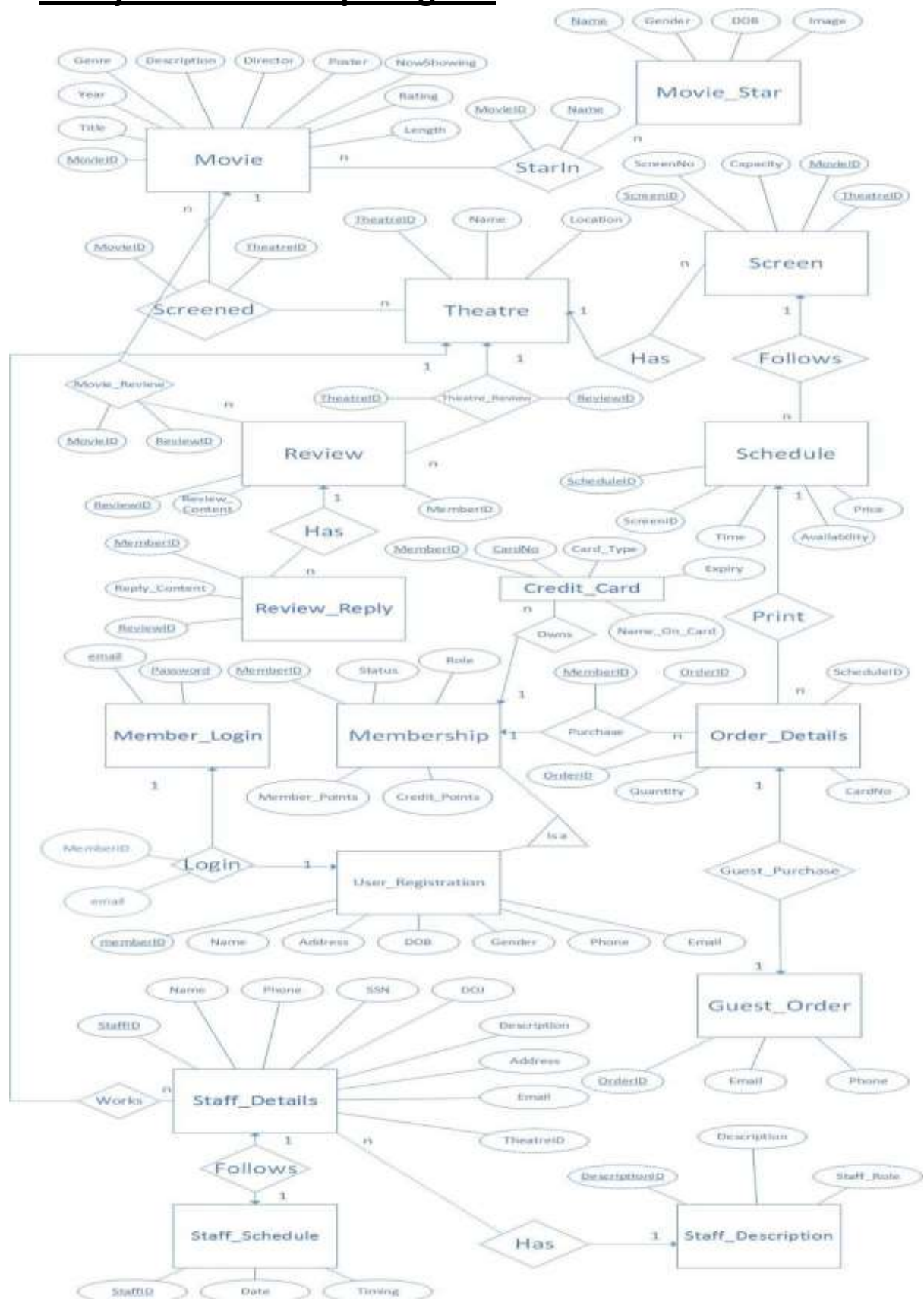# Online Ticketing and Theatre Management System

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➢ <u>Introduction</u>

- The document contains the basic design of a database system for 'Online Ticketing and Theatre management system'.
- Entity-Relationship (E-R) diagram has been designed based on the given requirements.
- The E-R diagram illustrates the various entity-sets and the relationship among them. Careful planning has been done in order to design the E-R diagram.
- The document contains SQL Schemas which have been designed based on the E-R diagram. Our database systems consists of 22 schemas that will be required for the project.
- The document concludes with a feature ownership sections which briefly describes each group members ownership with respect to project modules.

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➢ **Entity – Relationship Diagram**

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➢ SQL Schemas

Following schemas have been planned for the application:-

1. **Movie (movieId, title, year, genre, description, director, poster, nowShowing, rating, length)**
   - PK: movieId
   - FD: movieId → title, year, genre, description, director, poster, nowShowing, rating, length
   - The FD is non-trivial and the left side is a superkey and hence the relation is BCNF.

2. **StarsIn (movieId, name)**
   - FK: name references Movie_Stars (name)
   - FK: movieId references Movie(movieId)
   - FD: No FD's
   - The relation is BCNF.

3. **Movie_Star (name, gender, dob, image)**
   - PK: name
   - FD: name→ gender, dob, image
   - The FD is non-trivial and the left side is a superkey and hence the relation is BCNF.

4. **Theatre (theatreId, name, location)**
   - PK: theatreId
   - FD: theatreId→name, location
   - The FD is non-trivial and the left side is a super key and hence the relation is BCNF.

5. **Screen (screenId, screen_no, movieId, theatreId, capacity)**
   - PK: screenId
   - FK: movieId references Movie(movieId)
   - FK: theatreId references Theatre(theatreId)
   - FD: screenId→ screen_no, movieId, theatreId, capacity
   - The FD is non-trivial and the left side is a super key and hence the relation is BCNF.

6. **Schedule (time, availability, price, scheduleId, screenId)**
   - PK: scheduleId
   - FK: screenId references Screen(screenId)
   - FD: scheduleId→ time, availability, price, screenId
   - The FD is non-trivial and the left side is a super key and hence the relation is BCNF.

7. **Review (reviewId, reviewContent, memberId, likeCount)**
   - PK: reviewId
   - FK: memberId references User_Registration(memberId)
   - FD: reviewId→ reviewContent, memberId, likeCount
   - The FD is non-trivial and the left side is a super key and hence the relation is BCNF.

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8. **Movie_Review (movieId, reviewId)**
   - FK: movieId references Movie(movieId)
   - FK: reviewId references Review(reviewId)
   - FD: No FD's
   - The relation is BCNF.

9. **Theatre_Review (theatreId, reviewId)**
   - FK: theatreId references Theatre(theatreId)
   - FK: reviewId references Review(reviewId)
   - FD: No FD's
   - The relation is BCNF.

10. **Review_Reply (reviewId, memberId, replyContent)**
    - FK: reviewId references Review(reviewId)
    - FK: memberId references User_Registration(memberId)
    - FD: No FD's
    - The relation is BCNF.

11. **User_Registration (name, phone, address, DOB, email, gender, <u>memberId</u>)**
    - PK: memberId
    - FD: memberId→ name, phone, address, DOB, email, gender
    - The FD is non-trivial and the left side is a super key and hence the relation is BCNF.

12. **Member_Login (email, password)**
    - FD: email→ password
    - The FD is non-trivial and the left side is a super key and hence the relation is BCNF.

13. **Membership (memberId, credit_Points, member_ Points, status, role)**
    - FK: memberId references User_Registration(memberId)
    - FD: memberId→ credit_Points, member_ Points, status, role
    - The FD is non-trivial and the left side is a super key and hence the relation is BCNF.

16. **CreditCard (<u>memberId</u>, <u>card_number</u>, type, expiry, nameOnCard)**
    - FD: card_number→ type expiry nameOnCard
    - PK: memberId, card_number
    - The left side of FD is not a superkey. However, the right side is prime thus the relation is 3NF. Converting to BCNF we get 16.a and 16.b.

16. A **CrediCardDetails (<u>Card_number</u>, type, expiry, name_on_card)**
    - PK: Card_number
    - FD: Card_number→ type, expiry, name_on_card
    - The FD is non-trivial and the left side is a super key and hence the relation is BCNF.

16. B **CreditCard (<u>memberId</u>, <u>Card_number</u>)**
    - PK: memberId, Card_number
    - This is a BCNF relation.

17. **Order_Details (orderId, quantity, cardNo, ScheduleId)**
    - PK: orderId
    - FK: scheduleId references Schedule(scheduleId)
    - FD: orderId→ quantity, cardNo, ScheduleId
    - The FD is non-trivial and the left side is a super key and hence the relation is BCNF.

18. **Purchase (memberId, orderId)**
    - FK: memberId references User_Registration (memberId)
    - FK: orderId references Order_Details (orderId)
    - FD: No FD's
    - This is a BCNF relation.

19. **Guest_Order (orderId, email, phone)**
    - FK: orderId references Order_Details(orderId)
    - FD: No FD's
    - This is a BCNF relation.

20. **Staff_Details (staffId, name, phone, ssn, doj, description, address, email, theatreId)**
    - PK: staffId
    - FK: theatreId references Theatre(theatreId)
    - FK: descriptionId references Staff_Description(descriptionId)
    - FD: staffId→ name, phone, ssn, doj, description, address, email, theatreId
    - The FD is non-trivial and the left side is a super key and hence the relation is BCNF.

21. **Staff_Schedule (StaffId, date, Timing)**
    - FK: staffId references Staff_Details (staffId).
    - FD: No FD's
    - This is a BCNF relation

22. **Staff_description (descriptionId, decription, staff_role)**
    - PK: descriptionId
    - FD: descriptionId→ decription, staff_role
    - The FD is non-trivial and the left side is a super key and hence the relation is BCNF.

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➢ Steps to run the project

- To run this project you need to import the entire folder in Eclipse.
- Once the project is successfully imported and compiled the following screen will be displayed.

```
*********Welcome to AMC Movies*********

----------Featured Movies-----------
Inside Out
Deadpool
Minions
-----------------------------------


----------Menu------------
1. Login
2. Sign Up
3. Search Movie
4. Search Theatre
5. Queries
6. Exit
---------------------------
```

Step 1: Sign Up

- Select Option 2 for the Signup. Enter the necessary fields which will be displayed on the screen. Once all the information is filled the program will display the original window.

Step 2: Login

- The user can enter the Username and Password to login. Once the user successfully registers the information he will see the following screen.

```
***************Welcome Sahil Chalke **************
---------------------------------------------
Below are some movies recommended for you
---------------------------------------------

Tamaasha
Blackhat


---------------------------------------------

Please enter option number from below menu :

---------------------------------------------
1 - View/Edit Profile
2 - View Orders
3 - Search Movie
4 - Search Theatre
5 - Logout
```

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- The homepage of the user will display the list of featured movies.
- The user can select the option from the menu displayed.

Step 2(a) : View/Edit Profile

- This option will display the Users information as shown below.

```
Your Account details :
-----------------------------------------------

Name : Sahil Chalke
Phone Number : 3124833811
Address : 2851 S King Drive
Date of Birth : 1991-08-03
E-mail : schalke@hawk.iit.edu
Gender : Male
Available credit Points : 11
Total points : 110
Membership status : Silver
-----------------------------------------------


Please enter option number from below menu :

-----------------------------------------------
1 - Edit profile
2 - Previous Menu
3 - Logout
```

- The user will also have the option to edit the profile. Once this option is selected the user can edit his profile and the new values will be stored in the database.

Step 2(b): View Orders:

- On selecting this option the user can view his order history. The user will come to know about his past orders.

```
----------------------------Order History----------------------------------
Order ID    Movie Name        Theatre Name        Theatre Location      Time          Day         Quantity    Booked On
1004        Fifty Shades of Grey    AMC River East 21    322 E Illinois St    9A.M - 12P.M   12/07/2015   1           06-DEC-15


1. Home
2. Logout
```

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Step 2(c): Search Movie:

- The user can search the movie by the name. When the user Enter the name of the movie he can view the information about the movie.
- This option will also provide the reviews given by the users for that particular movie.

```
Enter Movie name:
Fifty Shades of Grey
Name: Fifty Shades of Grey
Year: 2015
Genre: Drama
Description: Literature student Anastasia Steeles life changes forever when she meets handsome, yet tormented, billionaire Christian Grey.
Director: Sam Taylor-Johnson
Stars: Dakota Johnson

Below are the reviews posted on this movie by our members:

--------------------------------------------------------------
Review Number : 1001
Amazing Movie!!!        By [Sahil Chalke]
Likes : 0
                Replies:
                Agree with the above comment    By [Sahil Chalke]
--------------------------------------------------------------

Select from below options for the Fifty Shades of Grey movie
1. Buy Ticket
2. Previous Screen
3. Like the comment
4. Create a Discussion Thread
5. Reply on Discussion
6. Logout
```

- The user can select the option to buy the movie ticket, like the comment, Create a discussion thread or Reply on the comment.
- If the user selects the option to buy the movie ticket then the list of theaters on which the movie is screened will be displayed.

```
--------------------------------------------------------------
Theatre Name: AMC River East 21
Screen Number: 1
Price: 150
Schedule: 12P.M - 3P.M
Day: 12/07/2015
Capacity: 200
Total Seats Available: 200
--------------------------------------------------------------
Theatre Name: AMC River East 21
Screen Number: 1
Price: 150
Schedule: 9A.M - 12P.M
Day: 12/07/2015
Capacity: 200
Total Seats Available: 199
--------------------------------------------------------------
Theatre Name: AMC River East 21
Screen Number: 1
Price: 175
Schedule: 6P.M - 9P.M
Day: 12/07/2015
Capacity: 200
Total Seats Available: 200
--------------------------------------------------------------

Enter the theatre Name: AMC River East 21
Enter time: 6P.M - 9P.M
Enter quantity: 5
Enter the day: 12/07/2015
```

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- The user need to enter the theatre name, time, quantity, day to buy the ticket.
- Once this information is provided the user will be given the option to either redeem the credit or points or not.
- He can chose the option depending upon this credit balance.
- Once appropriate option is selected the invoice of the ticket will be printed.

```
===========Invoice==========
Order ID: 1010
Movie: Fifty Shades of Grey
Theatre: AMC River East 21
Address: 322 E Illinois St
Day: 12/07/2015
Time: 6P.M - 9P.M
Quantity: 5
Credit Card Number: Ending with 0025
Total Price: 875
=============================

1. Send Email
2. Back
3. Logout
```

- The user can select the option to send the mail of the Invoice.
- The user can even start the discussion thread to comment on the movie.
- The user can even like the comment.
- The user can also reply on the comments.

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Step 2(d): Search Theatre

- The user can search the theatre by entering the desired theatre name.
- This will provide the list of number of movies which are currently screened in the theatre.

```
Enter Theatre name:
AMC River East 21

Below are the reviews posted on this theatre by our members:

-------------------------------------------------------------
Review Number : 1010
The theater lives upto the expectation. By [Sahil Chalke]
Likes : 0
-------------------------------------------------------------

---------------AMC River East 21---------------------
Address: 322 E Illinois St

Select from below options for the AMC River East 21 Theatre
1. Buy Ticket
2. Previous Screen
3. Like the comment
4. Create Discussion Thread
5. Reply on Discussion
6. Logout
1
Following movies are being screened:

Movie Name: Fifty Shades of Grey
Screen Number: 1
Schedule Time: 12P.M – 3P.M
Availability: 200
Price: 150
Day: 12/07/2015


Movie Name: Fifty Shades of Grey
Screen Number: 1
Schedule Time: 6P.M – 9P.M
Availability: 195
Price: 175
Day: 12/07/2015
```

- The user should then enter the movie name, day, quantity, schedule time to buy the ticket.
- He can also choose to but the ticket using credit points or not depending on the amount if credit points available.
- Once this option is selected the Invoice of the details will be displayed and the user can choose to send the email of the Invoice.

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```
Enter following details to purchase ticket:
Enter movie name: Inside Out
Enter day: 12/08/2015
Enter Schedule Time: 12P.M - 3P.M
Enter quantity: 2
**Do you want to redeem your membership points?**
1. Yes
2. No2
**Processing purchase**

**Congratulations!!. You have earned some credit points for your purchase.**
============Invoice===========
Order ID: 1011
Movie: Inside Out
Theatre: AMC River East 21
Address: 322 E Illinois St
Day: 12/08/2015
Time: 12P.M - 3P.M
Quantity: 2
Credit Card Number: Ending with 0025
Total Price: 250
=============================

1. Send Email
2. Back
3. Logout
```

- The user can also start the discussion thread and comment about the theatre.
- He can also like the comment by other users.
- The user can also reply on the comments

Step 3(a): Demonstrate the process of guest user buying the ticket (By Movie name)

- There is no need for the guest to login or signup. He can book the ticket either by selecting the Option 3 or Option 4.
- By selecting option 3 he can enter the movie name. The following screen will be displayed.
- The guest can only view the comments for that particular movie but he cannot
- Start the new discussion thread or reply on the comment.

```
Enter Movie name:
Minions
Name: Minions
Year: 2015
Genre: Comedy
Description: Minions Stuart, Kevin and Bob are recruited by Scarlett Overkill, a super-villain who, alongside her inventor husband Herb, hatches a plot to take over the world.
Director: Kyle Balda, Pierre Coffin
Stars: Amy Poehler

Below are the reviews posted on this movie by our members:

--------------------------------------------------------------------------
Review Number : 1000
Awesome Movie.Enjoyed a lot     By [Aniket]
Likes : 0
--------------------------------------------------------------------------

Select from below options for the Minions movie
1. Buy Ticket
2. Previous Screen
3. Like the comment
```

- If he selects to buy the buy the movie ticket then the movie screened in the theaters will be displayed.
- The guest needs to enter the theatre details to proceed further.
- The program will then ask the guest user to enter his full information along with his 16 digit card number to buy the ticket.
- Once this information is filled the guest Invoice will be printed with his last 4 digits of card number printed.

```
Enter your name: Dhruvit
Enter your email: dhruvit@gmail.com
Enter yout phone number: 5241417896
**Credit Card Details**
Enter your 16 Digit Credit Card number: 78965214036541347
Enter your expiry(MM/YY): 12/25
============Invoice============
Order ID: 1012
Movie: Minions
Theatre: AMC River East 21
Address: 322 E Illinois St
Day: 12/08/2015
Time: 12P.M - 3P.M
Quantity: 1
Credit Card Number: Ending with 4134
Total Price: 120
==============================

1. Send Email
2. Back
```

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Step 3(b): Demonstrate the process of guest user buying the ticket (By Theatre name)

- There is no need for the guest to login or signup. He can book the ticket either by selecting the Option 3 or Option 4.
- By selecting option 4 he can enter the theatre name. The following screen will be displayed.
- The guest can only view the comments for that particular Theatre but he cannot Start the new discussion thread or reply on the comment.

```
AMC River East 21

Below are the reviews posted on this theatre by our members:

---------------------------------------------------------------------
Review Number : 1010
The theater lives upto the expectation. By [Sahil Chalke]
Likes : 0
---------------------------------------------------------------------

---------------AMC River East 21---------------------
Address: 322 E Illinois St

Select from below options for the AMC River East 21 Theatre
1. Buy Ticket
2. Previous Screen
3. Like the comment
```

- Once the option of buy ticket is selected then the list of all movies running in that particular theatre will be displayed.
- The guest user needs to enter the movie details which he is interested to buy the ticket.
- He also needs to enter his personal information along with 16 digit credit card number to book the ticket.

```
Enter following details to purchase ticket:
--Personal Details--
Enter your name: Dhruvit
Enter email address: dhruvit@gmail.com
Enter phone number: 3214586354
--Credit Card Details--
Enter Card Type(MasterCard/Visa/AmericanExpress):Visa
Enter 16-digit card number: 4585201412563214
Enter expiry: 25/11
--Booking Details--
Enter movie name:Inside Out
Enter day: 12/08/2015
Enter Schedule Time: 12P.M - 3P.M
Enter quantity: 5
Confirm
1. Yes
2. No
1
Ticket Booked Successfully!!
============Invoice============
Order ID: 1013
Movie: Inside Out
Theatre: AMC River East 21
Address: 322 E Illinois St
Day: 12/08/2015
Time: 12P.M - 3P.M
Quantity: 5
Credit Card Number: Ending with 3214
Total Price: 625
==============================

1. Send Email
2. Back
```

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Role of Owner.

- To login as the owner please enter Username: larry@google.com and password as **larry.**

- The following screen of the owner will be displayed

- The following screen of the owner will be displayed

```
Enter email Id: larry@google.com
Enter password: larry
*************Welcome Larry Page**************
----------------------------------------------

Please enter option number from below menu :

----------------------------------------------
1 - Hire Staff
2 - Manage Staff Schedule
3 - Set Credit Points Policy
4 - View Registered Users Details
5 - View All Tables
6 - Set Movie Schedule
7 - Delegate Responsibilities
8 - Logout
```

- The owner has the to select one of the options shown above.
- To hire the staff the owner needs to select option 1 and fill the details of the staff as shown below.

```
*-----Staff Hiring Form for AMC group of Theaters-----*

Full Name: Aditya
Address: 3001 S King Drive
Phone No: 415587452
Email: adi@yahoo.com
9-digit SSN: 458523654
Date of joining(MM-DD-YYYY): 01-25-2015
Select from following work category:
        a. Cleaning
        b. Ticketing
        c. Snack Provider
        d. Security
        e. Manager
c
Select 'Location Id' following work locations:
        1000: AMC River East 21
        1001: AMC 600 North
        1002: AMC Ford City 14
        1003: AMC Showplace Galewood
Work Location Id: 1000
Confirm.
1. Yes
2. No
2
Staff registered succesfully. Redirecting to home page.
```

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- The owner can update the staff schedule or set the new staff schedule.
- The process is shown in the below screenshots.

```
**Staff Schedule Manager**
Please enter your choice:
1 - Set Staff Schedule
2 - Update Staff Schedule
3 - Exit
1
Staff currently working in AMC Group of Theater:
Staff ID        Staff Name        Works At
1002            Balaji            AMC River East 21
1003            Anirudh           AMC River East 21
1001            Anas Shaikh            AMC River East 21
1010            Aditya            AMC River East 21
Enter the staff ID: 1010
Enter date in yyyy-mm-dd: 2015-02-01
Enter the start time of the shift in 24hrs  e.g 13.30: 09.15
Enter the end time of the shift in 24hrs  e.g 20.30: 21.00
Schedule updated for staff ID:1010

**Staff Schedule Manager**
Please enter your choice:
1 - Set Staff Schedule
2 - Update Staff Schedule
3 - Exit
```

- The owner can also update the staff schedule of the existing staffs.
- He can also view all the registered users details, set credit point policy, and view all the tables of the database by choosing the particular option.
- If he wants to set the movie schedule then he can select option 6 and the following screen will be displayed.

```
There are following movies which are currnetly running:-

Inside Out
Minions
Blackhat
Deadpool
Tamaasha

Please enter the movie: Deadpool
Please Select the theatre from the Below List:-
AMC River East 21
AMC 600 North
AMC Ford City 14
AMC Showplace Galewood
AMC 600 North
Please select screen:
1
2
2
Please enter the ShowTimes from Below List:-
1. 9A.M - 12P.M
2. 12P.M - 3P.M
3. 3P.M - 6P.M
4. 6P.M - 9P.M
5. 9P.M - 12P.M
12P.M - 3P.M
Please the the price for one ticket: 500
Please enter the date (MM/DD/YYYY): 12/15/2015
The Movie Schedule is inserted successfully!!!!!
```

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- The owner needs to enter the schedule for that particular movie by choosing the theatre name, theatre schedule price which is shown in the above screen shot.
- Once the schedule is updated he will get the message stating that movie schedule is updated successfully.

- The owner can grant and revoke the privileges by choosing option 7. The manager of the theatre will then have the privileges of the owner. When the owner decides to revoke the privileges then he should choose option to remove the privileges.

- Please refer to below screenshot for this scenario.

```
Following managers work at respective locations:-
Staff ID: 1003
Name: Anirudh
Works At: AMC River East 21

Select from following option:
1. Give Priviledges
2. Remove Priviledges
1
Enter staff_id: 1003
Priviledges give for staff id: 1003


Following managers work at respective locations:-
Staff ID: 1003
Name: Anirudh
Works At: AMC River East 21

Select from following option:
1. Give Priviledges
2. Remove Priviledges
2
Enter staff_id:
1003
Priviledges removed for staff id: 1003
```

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Web Admin:

- To login as the Web Admin please enter Username: ashaikh6@hawk.iit.edu and password as **aaa.**
- The following screen will be displayed.

```
**************Welcome Anas Shaikh**************
-----------------------------------------------

Please enter option number from below menu :

-----------------------------------------------
1 - View All Tables
2 - Update a table
3 - View registered users details
4 - Logout
```

- The web admin can choose one of the three options displayed.
- If the web Admin chooses to View All Tables he needs to enter the table from the list of tables which will be displayed.

```
Below is the list of tables
-----------------------------------------------

CREDIT_CARD_DETAILS
POLICIES
PRIVILEDEGES
MOVIESTAR
MOVIE
STARIN
THEATRE
SCREEN
SCHEDULE
USERREGISTRATION
REVIEW
MOVIEREVIEW
THEATREREVIEW
REVIEWREPLY
MEMBERLOGIN
MEMBERSHIP
ORDERDETAILS
PURCHASE
GUESTORDER
STAFF_DESCRIPTION
STAFFDETAILS
STAFFSCHEDULE
-----------------------------------------

Please enter the table name to see the data or press 'R' to return :
THEATRE
-----------------------------------------------
```

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```
Please enter the table name to see the data or press 'R' to return :
THEATRE
|----------------------------------------

Content of table THEATRE
----------------------------------------------------------------------

THEATRE_ID :- 1000
NAME :- AMC River East 21
LOCATION :- 322 E Illinois St
----------------------------------------------------------------------

THEATRE_ID :- 1001
NAME :- AMC 600 North
LOCATION :- 600 N Michigan Avenue
----------------------------------------------------------------------

THEATRE_ID :- 1002
NAME :- AMC Ford City 14
LOCATION :- 7601 South Cicero Avenue
----------------------------------------------------------------------

THEATRE_ID :- 1003
NAME :- AMC Showplace Galewood
LOCATION :- 5530W Homer St
----------------------------------------------------------------------
```

- To update the table the Web admin needs to write the update query in proper syntax.
- To view all the details of registered users he can select option three.
- The list of all members will be displayed to him.
- The Web admin must now enter the member id of the registered user to view his complete details.
- Below is the screenshot of the same.

```
List of registered users
----------------------------------------------------------------------

Member Id              Name                   E-mail address
     1002         Anas Shaikh         ashaikh6@hawk.iit.edu
     1003         Larry Page               larry@google.com
     1007            Anirudh               anirudh@amc.com
     1006              Balaji                balaji@amc.com
     1004       Sahil Chalke         schalke@hawk.iit.edu
     1005             Aniket          aniket@hawk.iit.edu
----------------------------------------------------------------------

Enter member ID to see more details or R to return
1004
|----------------------------------------------------------------------

Name : Sahil Chalke
Phone : 3124833811
Address : 2851 S King Drive
Date of Birth : 1991-08-03
E-mail : schalke@hawk.iit.edu
Gender : Male
Available Credit points : 26
Total Points : 1190
Membership Status : Silver
User Role : Non-Staff
----------------------------------------------------------------------
```